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UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH ADMINISTRATION
BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE
WASHINGTON 25, D. C.

In cooperation with State, Federal, and Other Agencies

COTTON INSECT CONDITIONS -- May 2, 1950
(First Cotton Insect Survey Report for 1950)

The past winter was mild and conditions were favorable for boll weevil survival. The weevil populations were high last fall and studies made during March and April show that many weevils have survived in Virginia, North Carolina, South Carolina, Louisiana, and Texas. They probably survived in large numbers in all areas where they were abundant last fall. In most States the entomologists and the Extension Services are making plans for a real fight against the boll weevil during 1950. On all farms where the weevils were abundant in 1949 the growers should be prepared by having the insecticides, and equipment for applying them, ready for use when needed.

Hot, dry weather during May, June, and July may greatly improve the present serious boll weevil prospect, but no farmer can afford to take the chance of depending entirely upon the weather to control the weevil. He should follow the recommendations of the Experiment Station and Extension entomologists in his State and be prepared to fight the weevils whenever it is necessary to do so.

Thrips were the most abundant of the cotton insects in the Lower Rio Grande Valley of Texas during March and April. Insecticides were used more extensively for their control than during any previous year.

OTHER COTTON INSECT SURVEY REPORTS

At weekly intervals beginning March 16, seven cotton insect survey reports covering conditions in the Lower Rio Grande Valley of Texas have been issued by Herman S. Mayeux, Associate County Agent - Entomology, San Benito, Texas. These reports contain valuable information regarding the abundance, distribution, damage, and control of thrips, aphids, cotton fleahopper, boll weevil, cutworms, bollworm, spider mites, and other pests of cotton.

INSECTICIDES

On April 20, Herman S. Mayeux, San Benito, Texas, reported: "Insecticide concerns have not been able to supply the demand for TEPP, possibly because the demand was not expected."

BOLL WEEVIL

VIRGINIA: F. F. Bondy, of this Bureau, with headquarters at the Pee Dee Experiment Station, Florence, South Carolina, made surface trash examinations on five farms in southeastern Virginia on April 13. Boll weevils were found on each farm at rates varying from 3,872 to 6,776 weevils per acre of surface trash, averaging 5,131 weevils per acre. Boll weevil survival studies have not previously been conducted in Virginia, but the survival this year is higher than recorded at Florence, South Carolina, during any year prior to 1950. Examinations of surface trash adjacent to cotton fields were made on three farms in Nansemond County, and on one farm in each

of Greenville and Southampton Counties with the following results:

County	No. Boll Weevils Per Acre
Nansemond - 1st farm	4,356
2nd farm	5,324
3rd farm	3,872
Southampton	6,776
Greenville	5,324
Average	5,131

NORTH CAROLINA: Records are not available in regard to boll weevil survival in previous years in North Carolina. F. F. Bondy, of this Bureau, made an examination of surface trash collected from the woods adjacent to cotton fields in 7 counties of North Carolina during the fall of 1949 and again during March 1950. The results of these examinations, indicating high survival of boll weevils, are given in the following table:

Fall and Spring Surface Woods Trash Examinations
by Counties, North Carolina, 1949-1950.

County	Boll Weevils Per Acre of Surface Trash	
	Fall 1949	Spring 1950
Cleveland	1,355	2,226
Rowan	3,388	2,660
Lee	11,616	9,680
Scotland	18,231	15,972
Hoke	5,969	8,067
Robeson	2,662	1,694
Sampson	6,292	6,937
Average:	7,073	6,748

SOUTH CAROLINA: Although the importance of the boll weevil to this year's cotton crop in South Carolina and other States will depend chiefly on weather conditions during June and July, many people are inquiring in regard to the present weevil situation. Farmers and others interested in cotton production can get no comfort from the studies of weevil survival that have been made by the entomologists of the U. S. Department of Agriculture at the Pee Dee Branch of the South Carolina Experiment Station at Florence.

The number of boll weevils going into hibernation last fall as indicated by surface trash examinations was higher than during any previous year since fall counts were started in 1942. In the fall of 1949 the examination of surface trash collected from woods adjacent to cotton fields on 20 farms in Florence County indicated that boll weevils had entered hibernation at the record-breaking rate of 10,744 per acre of surface trash. The previous high record of weevils entering hibernation was 4,840 weevils per acre in the fall of 1945. The past winter was mild, and it was

assumed the weevils would survive in large numbers. During March the examination of surface trash disclosed the presence of weevils at the rate of 11,108 per acre. The finding of more live weevils per acre this spring than last fall in Florence County indicates that the survival was very high, and that the samples of surface trash from 20 farms examined by the entomologists during March happened to contain more weevils than similar samples examined late last fall.

The previous high record for survival of weevils at Florence was last year (1949) when they occurred during March at the rate of 3,969 per acre. These records indicate that the weevils were 2.8 times as abundant in March of 1950 as in March of 1949. During the previous 11 years (1937-1948) weevil examinations made during the spring have disclosed the presence of weevils at various rates from 176 to 3,582 per acre. The average number of weevils in ground or surface trash examinations in March during the past 13 years was 2,976 per acre. Therefore, there were 3.7 times as many weevils in March of 1950 as compared with the 13-year average.

**Fall and Spring Surface Woods Trash Examinations
in Florence County, South Carolina, 1938 to 1950.**

Year	Boll Weevils Per Acre of Surface Trash	
	Fall	Spring
1937-1938	---	1,472
1938-1939	---	3,582
1939-1940	---	176
1940-1941	---	1,960
1941-1942	---	1,839
1942-1943	3,963	2,995
1943-1944	2,731	1,210
1944-1945	4,324	2,580
1945-1946	4,840	2,193
1946-1947	---	2,904
1947-1948	3,974	2,710
1948-1949	3,969	3,969
1949-1950	10,744	11,108
Average:	4,935	2,976

Surface trash examinations in 7 other counties of South Carolina showed weevils in large numbers in each county. The March surface trash examinations disclosed the presence of boll weevils at the rate of 12,100 per acre in Darlington County, 11,051 in Laurens County, and 7,841 in Orangeburg County. The records relating to the surface trash examinations by counties in South Carolina, as compiled by F. F. Bondy are as follows:

**Fall and Spring Surface Woods Trash Examinations
by Counties, South Carolina, 1949-1950.**

County	Boll Weevils Per Acre of Surface Trash	
	Fall 1949	Spring 1950
Florence	10,744	11,108
Darlington	12,584	12,100
Sumter	5,324	5,969
Charleston	4,719	3,630
Orangeburg	8,325	7,841
Laurens	12,503	11,051
Clarendon	4,477	3,267
Dillon	7,744	7,744
Average:	8,302	7,839

LOUISIANA: In northeast Louisiana, near Tallulah in Madison Parish, this Bureau has a field laboratory for the study of cotton insects and their control. Among the investigations conducted at Tallulah is the determination of the winter survival of the boll weevil. Studies are made each fall to obtain the average number of weevils per acre in the surface trash of woods adjacent to cotton fields. Similar studies are made each March. During the fall of 1949 the examination of 200 samples of ground or surface trash collected from woods near cotton fields indicated that boll weevils had entered hibernation at the average rate of 3,231 per acre of ground trash. This was the largest number of weevils to enter hibernation in the vicinity of Tallulah during any fall since these studies were started in 1936, except the fall of 1945 when live weevils were found at the average rate of 4,199 per acre.

More serious to the cotton growers is the fact that during March 1950, the examination of 200 samples of ground trash indicated that weevils had survived the winter at the average rate of 2,202 per acre. This is the highest survival that has occurred during the fifteen years that these studies have been conducted. The next highest survival was last year (1949) when weevils survived at the average rate of 1,710 per acre. The third highest survival was in 1945 when they occurred at the rate of 1,512 per acre. During the other twelve years live weevils have been found during March at rates varying from 50 to 1,065 per acre. On a percentage basis 68% of the weevils that entered hibernation last fall at Tallulah were alive during March. During only two previous springs, 1941 and 1949, did a higher percentage of the weevils survive, but in those years there were not as many weevils in March because the weevil populations were lower the previous fall.

The summary of ground trash examinations at Tallulah, as compiled by R. C. Gaines, is as follows:

SUMMARY OF GROUND TRASH EXAMINATIONS TALLULAH, LOUISIANA, 1936 TO 1950		
Year	Live Weevils Per Acre of Ground Trash	
	Fall	: Spring
1935-36	---	141
1936-37	2,118	50
1937-38	519	186
1938-39	1,284	226
1939-40	2,243	190
1940-41	721	920
1941-42	1,484	327
1942-43	2,916	750
1943-44	2,488	625
1944-45	2,435	1,512
1945-46	4,199	1,065
1946-47	2,698	426
1947-48	1,178	177
1948-49	2,146	1,710
1949-50	3,231	2,202

TEXAS: McLennan County in central Texas. - K. P. Ewing, Waco, reported on April 6: "The winter in the central Texas area was very mild. The lowest minimum temperature during December was 24° on December 23. During January there were only 8 days during which minimum temperatures below 32° were recorded. Minimum temperatures of 22° occurred on January 4 and 5. The lowest minimum temperature recorded for February was 32° on February 1. March was very warm with the exception of March 13 and 14

when minimums of 27° and 26° were recorded. Winter temperatures have not been severe enough to cause appreciable weevil mortality.

"The accompanying table gives comparative data of boll weevil activity in hibernation cages during March of the past 11 years. It will be noted that the activity (average number of weevils per inspection) was greater during March of 1950 than during March of any of the preceding 10 years. The weevil activity during the last 5 days of March 1950 ranged from 50 to 72 with an average of 58.6 weevils per inspection. The data given in the table indicate that when the activity averaged 4 or more weevils per inspection during March the survival under natural conditions was high. Weevil survival can be expected to be high during 1950."

"Boll Weevil Activity in Hibernation Cages During March and Seasonal Survival,
Waco, Texas, 1940 to 1950

Year	: No. of weevils : : installed	Ave. number of weevils : : active at each inspection :	Seasonal survival Percent
1940	5,000	0.8	0.20
1941	5,000	4.3	21.58
1942	5,000*	0.8	0.71
1943	5,000*	0.0	0.23
1944	5,000	20.0	2.80
1945	5,000	21.8	3.44
1946	5,000	4.9	1.32
1947	5,000	0.0	0.18
1948	5,000	0.8	0.22
1949	5,000	0.6	0.06
1950	5,000	24.9	?

*Three cages located in the woods were destroyed by fire in January, 1942 and two in February, 1943."

Cameron, Hidalgo, and Willacy Counties in the Lower Rio Grande Valley: A. J. Chapman Brownsville, reported on March 23: "We have every reason to believe that the weevil carry-over will be heavier this season than last season. The stalk destruction was accomplished later in the fall of 1949 than in the fall of 1948 and records made in previous years have shown that a delay in stalk destruction increases weevil survival. The past winter was unusually mild and no freezing temperatures were recorded in the Lower Valley area. Due to the mild season the soca or volunteer cotton continued fruiting throughout the winter and afforded opportunity for boll weevil breeding. Boll weevils were found breeding on volunteer cotton plants throughout the winter months. Much higher carryover of boll weevils is expected this year than last year."

Herman S. Mayeux reported on April 20: "Weevils have moved into cotton from volunteer plants around the fields and already increasing on older cotton. One-third of the older fields examined have punctured squares. This would indicate that boll weevils can become a major pest in 1950. All of these fields are in Cameron and Hidalgo Counties."

MISCELLANEOUS COTTON INSECTS IN THE LOWER RIO GRANDE VALLEY

The entomologists and others interested in cotton production in the Lower Rio Grande Valley are cooperating in a cotton insect survey in that region. Herman S. Mayeux has issued seven cotton insect survey reports at weekly intervals from March 16 to April 27. The following records are taken largely from these reports:

Thrips

March 16: "Thrips are damaging cotton seedlings in almost every field in the three Lower Valley Counties: Hidalgo, Cameron, and Willacy. An emergency situation exists in the areas where cotton is planted near or following vegetable crops such as onions, tomatoes, potatoes, cabbage, carrots, etc. A few fields, especially in Willacy around Lyford, and scattered throughout Cameron have already been killed. Other cotton fields are seriously stunted. The thrips have moved onto seedling cotton within five days after it is up. Most killed or stunted fields are in the two-leaf or four-leaf stage."

March 23: "Thrips continue to kill or stunt fields of seedling cotton in all three Lower Rio Grande Valley counties. Practically every field is being noticeably damaged. Fields that were treated when silvering first began to appear have escaped serious damage."

March 30: "Hundreds of cotton farmers in the Lower Rio Grande Valley purchased low volume sprayer machines and controlled thrips on seedling cotton during the week ending Wednesday, March 29. Others used airplane sprayers to good advantage. Very little dusting has been done because of the high winds. Thrips stunted several thousand fields because many farmers have delayed treatment waiting for calm weather when dusts can be used. Low volume sprays, applied successfully in high winds make it possible to control early season insects so that the crop can fruit early."

"Almost every field in the vegetable-producing areas has needed poison as soon as it is up to a stand (within three days after it starts coming up). Farmers are learning to have the poison and sprayers ready ahead of time."

"Most treated fields need a second application after about ten days. Farmers are urged to examine the underside of leaves when the plants begin to come up and afterwards and to use poison as soon as many of the leaves show a small amount of silvering underneath."

April 6: "Thrips continue to stunt young fields in the two-leaf to six-leaf stages, especially on land near to or following vegetable crops. At least fifteen percent of the Valley fields were poisoned for thrips during the last seven days. Most of this was very young cotton."

April 13: "The fields are not severely stunted by either thrips or aphids as a year ago. Most farmers have controlled thrips before serious stunting occurred and the severe aphid outbreak of early April last year is slow in developing this year..... Young fields that have just come up are still under attack by thrips. Thrips damage is hardly noticeable in most older fields."

April 20: "Thrips are of little importance except in a few very young, late planted fields."

Bollworm

A. J. Chapman, Brownsville, reported on March 25: "Eggs of the bollworm moths were found in small numbers in a few fields during the week."

R. L. McGarr, San Benito, reported on April 16: "Bollworms caused serious damage near Port Isabel."

Herman S. Mayeux, San Benito, reported on April 20: "Bollworms threaten in all

areas. A few fields of squaring or blooming cotton have been under attack. One field in Mercedes has lost 20% of the squares to bollworms." On April 27: "Bollworm moths are depositing eggs on cotton throughout the area."

Aphids

Herman S. Mayeux reported on April 20: "Aphids are present in all of the fields and are rated as 'many' in 21% of the fields examined. Most of the poison used during the past week has been for aphid control. Factors causing the aphid build-up have been cool northerners and the use of poisons which do not kill the aphids along with their insect enemies." On April 27: "Natural enemies are slaughtering aphids by the billions."

Cotton Fleahopper

Herman S. Mayeux reported on April 20: "Showers that fell in most of the Valley during the week will probably cause fleahoppers to increase. The survey shows that most squaring fields in Hidalgo and Cameron Counties have less than ten fleahoppers per one hundred terminal buds. A few fields have an average of fifteen or more hoppers per one hundred terminal buds." On April 27: "There has been almost no increase in fleahoppers during the week. Fleahoppers have been reported from almost every community in the three counties, including Willacy County. Recent showers are expected to bring on an increase soon."

Spider Mites

San Benito, April 16. R. L. McGarr reported: "Red spiders were noted in a number of cotton fields with serious infestations in a few."

MISCELLANEOUS COTTON INSECTS IN THE EL PASO VALLEY

L. W. Noble, Ysleta, reported April 14 that the Lygus and other sucking bugs that are destructive to alfalfa and cotton are nearly four times as numerous on alfalfa this year as in 1949. This may be due to the higher survival following the mild winter and also to the fact that spring is earlier than in 1949.

PREPARED MAY 2, 1950

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